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# FORTS versus SHIPS:

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BASEY VOL 1-2951

### DEFENCE OF THE CANADIAN LAKES

AND

ITS INFLUENCE ON THE

## GENERAL DEFENCE OF CANADA.

BY

AN OFFICER.

BY TOU. P. L. MACBOUGALO

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#### INTRODUCTION.

The two subjects treated of in the following pages are both military; they are in fact the two great military problems of the day: and in their correct solution both the national honour and the national finances are deeply involved. They have been written during the leisure of a passage across the Atlantic, and the last subject here treated of derives peculiar significance from what is now passing under the eyes of the writer in the United States.

Boston, U. S., July 10, 1862.

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# THE MERRIMAC AND MONITOR,

## THE SPITHEAD FORTS,

AND

#### SLEIGH'S FLOATING BREAKWATER.

The account of the fight between the "Merrimac" and "Monitor," and its results, threw England into a state of monomania. Ships with armour could go anywhere, and do anything; as to forts, they were of no account. In deference to the general feeling, Ministers reassembled the Defence Commission to take further evidence, with a view to determine whether it might not be expedient to suspend the construction of the costly permanent forts, which were intended to serve as advanced posts for the protection of our harbours and dockyards.

A few days later it was announced in the House of Commons and in all the newspapers that the tables had been completely turned, and that the results of an experiment at Shoeburyness had triumphantly and conclusively restored the ancient superiority of guns over the sides of floating structures. Several shots (156-pounders) fired out of the

Armstrong 12-ton gun, with a charge of 50 lbs. of powder, had gone through the target representing a section of the "Warrior's" side as if it had been paper; with such force indeed that the Secretary of the Admiralty said it would probably have gone through the other side of the ship also.

Forts were again in the ascendant, and nothing could withstand them. The Defence Commission adhered to its first opinion, and the building of the forts, suspended for a time, was to be at once resumed.

News of the engagement at New Orleans next arrived to turn the vane of opinion round once more. This time ships—and it was confidently asserted wooden ships—had successfully engaged forts, and forced the obstructions, which had been deliberately prepared in a river, under the fire of the batteries.

While men's minds were thus unsettled, it was revealed to the public that the trial at Shoeburyness above referred to, which was supposed to have resulted in the decisive triumph of the Armstrong gun, had received a very false colouring. The fact was, as stated, that the target had one of its plates perforated by the first shot, fired from the distance of 200 yards with 40 pounds of powder; but it was not stated that this plate had been much shaken in a former trial, having been struck almost on the same spot by eleven successive shots, of which three were solid 200-pounders, three solid 100-pounders,

and that it had successfully resisted perforation: furthermore, that two shots, fired afterwards against an unimpaired plate with an increased charge of 50 pounds, although they penetrated the iron armour and teak backing, failed to break the inner iron skin of the ship, and consequently no person in the ship could have been injured by them.

The reflection suggested by all this is: If we find such difficulty in ascertaining the real facts of an experiment, made within four hours of London, in which the nation is so deeply concerned, how can we place confidence in the relation of events which take place at the distance of 4000 miles, where the actors too, both from vanity and policy, are interested in exaggerating or misstating the facts.

It is clearly unsafe to base a conclusion involving the expenditure of millions of money, on the result of any isolated experiment. Where such a disturbance is taking place in all the elements of the military art, the experience of several campaigns is needed before really practical and scientific men can feel themselves safe in dogmatizing on the subject.

The following remarks are made in the hope of lifting a portion of the veil by which the question of Forts *versus* Ships is obscured.

1st. It is probable that in the long run, guns will establish and maintain the same relative superiority over the sides of ships which they have, until lately, enjoyed undisputed; and probably this will even be

the case whether these guns are in floating structures or mounted on granite foundations.

2nd. It is certain that floating structures, intended simply for the defence of harbours, will always be able to carry both thicker armour and heavier ordnance than hostile vessels which come over sea to attack them.

3rd. It is certain that forts on solid foundations will always be able to carry thicker armour and heavier guns than either; in fact, that they may be made absolutely invulnerable to shot, while they may be superior in weight of metal to any enemy's ship which ventures to engage them.

The advocates of the Spithead forts (for example) will say, "Then our case is made out, this is all we ask; proceed then to the logical conclusion and give us the forts."

Not so fast however; the words in italics contain the gist of the whole matter—which ventures to engage them; or it would be more correct to say which is obliged to engage them before it can injure the arsenal, dockyard, or city, which the forts are intended to defend.

It may be desirable to construct the Spithead forts, but undoubtedly not before we shall have acquired a positive certainty on the following points:—

First. That their fire will be able to destroy any vessels which may attempt to pass between them.

Second. That their distance in front of Portsmouth is such, that a hostile squadron shall not be

able to shell the dockyard without being itself destroyed by the fire of the forts; or, in other words, that it shall be impossible for an enemy's fleet to lie within shelling range of Portsmouth, and be at the same time beyond reach of being seriously injured by the forts.

With respect to the first condition, we know positively that no gun is yet in existence which can cause the smallest damage to an iron-plated vessel at the distance of 1000 yards, that is to say, half the distance between any two forts. It is certainly possible such a gun may yet be found. But granting so much, it would only restore the old conditions of warfare as between guns and ships. Our wooden ships were never deterred from running the gauntlet past shore batteries, where a sufficient object was in view, by the certainty that a round shot would go through their sides, or even by the far greater havoc to which they were liable from the bursting of a shell between decks: and from this last danger, the greatest to which wooden ships were exposed, ironsides are, and will continue, certainly exempt.

Iron-plated vessels may without any great rashness, run the chance of a damaging shot from a battery 1000 yards distant, even supposing a shot to go through where it strikes; for it is one thing to hit a stationary target of which the distance is ascertained to a foot, another to strike an object moving at the rate of ten knots an hour, whose

range can only be determined by the experience of several shots.

With respect to the second condition above stated —the only way in which a military position either on land or water can be secured from bombardment, is now, as it always has been, to establish covering posts sufficiently far in advance to keep an enemy beyond shelling range. That is the object of the Spithead forts. The question is, will they effect that object? They may do so now, though even that is doubtful. The most advanced fort is, it is understood, just 3 miles from the dockyard, or 5280 yards: if this distance be correct, the most powerful gun now known could in no way interfere with the bombardment of Portsmouth; for it is certain that with our present ordnance—and it is by present fact we must be guided, not by possible future contingencies—an enemy's vessel could lie 400 yards from the most advanced fort, whatever may be its distance in front of Portsmouth, and shell that place in perfect security.

But admitting for the sake of argument that the Spithead forts are sufficiently advanced to effect the object of their construction at the present time, it may not be so a few years hence. The whole world is now occupied in the attempt to produce improved ordnance. In the case under consideration improvements in gunnery will tell both ways; and it is within the scope even of probability that a few years' time may see the effective range of shells at

not less than 8000 yards; in which case, supposing the distance of the forts from Portsmouth to be even four miles, an enemy's vessel might throw shells into the place at a very infinitesimal risk of being injured by the forts in question; and thus those structures would remain as laughing stocks to the next generation,—costly monuments of the improvement in gunnery which had rendered them useless.

The conclusion is that where so large an expenditure is involved,—where also all the conditions of warfare are in a state of constant change—it would be rash in the extreme to spend so much money on works which in a few years' time might become absolutely useless.

The same money spent on stationary floating batteries would provide a defence whose efficiency could not be affected by any increase in the range of projectiles, because the floating batteries could shift their berth at will and take up any position conformable to the exigencies of the day. They would thus form that flanking support and protection to the swifter vessels which the forts are intended to supply, but which the latter will entirely fail to do so soon as the swifter vessels are obliged to advance 1000 yards further to seaward, to engage at close quarters the bombarding vessels of the enemy.

Floating batteries would always be superior to any possible assailment as regards vulnerability and weight of metal: they could for the present be placed between the shoals on which the foundations of the forts have been commenced—a great advantage, since the shoals guard themselves without batteries—and in such numbers that they should cross their fire at the distance of 200 in place of 1000 yards; while a line-of-battle, resting on these as flanks, should be formed by the "Warriors," &c. of the fleet.

The advocates of Forts versus Floating Batteries say that the last would be far the most costly to keep in repair: to this it is answered—the question does not lie between two schemes of equal efficiency and unequal costliness, but between efficiency and probable absolute uselessness which is dear at any price.

The above are probably the considerations which have induced the Government wisely to suspend the construction of the Spithead forts until a brighter light shall be thrown on the subject by experience.

The foregoing remarks are mainly intended as an introduction to an invention which would effect a compromise between permanent forts and floating batteries, combining, as it would do, the offensive and defensive capabilities of the first with the mobility of the last.

The invention is due to the ingenuity and practical knowledge of Captain Adderley Sleigh, himself a sailor, whose original object was to supersede the ruinously costly structures, raised from the bottom of the sea for the protection of harbours, by floating breakwaters at one-tenth of their cost. The simple

reasoning on which he established his plan was as follows:—

The force exercised by a wave against a sea wall is not a constant force or pressure, but a succession of blows more or less violent according to the force of the storm by which the successive waves are impelled.

If the sea wall be upright it will sustain the full force of each wave. Incline the wall, however, and the force decreases with the number of degrees of elevation. The force, a maximum against a perpendicular surface, or when the elevation is 90°, becomes 0 when the surface is horizontal.

Captain Sleigh therefore gave the front surface of his breakwater, in other words the sea-wall, the same inclination as that which a sea beach naturally assumes under the action of the waves, that is to say—a slope of 15° with the horizon. The force of a wave therefore dashing against this inclined front is, in comparison with the force of the same wave acting against an upright wall, as 15° to 90°, or as 1 to 6.

Here we find a diminution of § to the force due to the inclination; but a further diminution results from the absence of rigidity of a floating body which has a free movement in the water backwards and forwards. This free movement is obtainable in connection with permanency of position, by attaching at certain distances, along both the front and rear of the structure, very heavy chain cables having

a great deal of slack, which are fastened at the other end to permanent moorings laid down at the bottom of the sea.

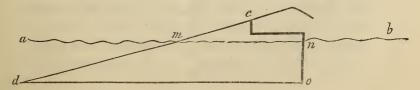
Thus a wave impelled by a violent storm dashes against the front surface of the breakwater, and 5 of its direct force being lost by reason of the inclination, the remaining  $\frac{1}{6}$  exercises on it a horizontal pressure to which the floating structure slowly yields by receding. Now comes the action of the mooring chains, which are analogous in their effect to the buffers of a railroad carriage. If these chains were taut or rigid, they might perhaps either snap under the shock or drag their moorings; but the long slack and their weight act as a spring, and before they become taut so as to sustain any violent strain, the action of the wave has ceased, and the reaction of the mooring cables then draws the structure quietly forward again into its place, to sustain a succession of similar shocks from succeeding waves, yielded to and recovered from in the same manner.

Not being a sailor, the writer is unable to speak with authority on the one point on which alone a landsman is incompetent to judge, viz. the possibility of laying down permanent moorings that may be depended on; but the most eminent practical and scientific sailors England could produce pronounced in favour of Captain Sleigh's plan. As regards the strain on the cables, there is no analogy whatever between the floating breakwater and a

ship riding at anchor. The most dangerous force to the stability of a ship's cable is not the lateral action of the waves against the side of the vessel, but the perpendicular upward action of the waves beneath her. Floating on the surface of the water and acted on by every wave, it is a marvel that any cable can resist the violent upheaving of the bow.

But the exemption of the floating breakwater from this disturbing cause is obtained by adapting the structure to the following well known fact, viz. that even under the influence of the most violent storm the agitation of the sea is only on the surface. In the Atlantic the disturbing influence may extend at times 18 feet below the general surface: in the English Channel 14 feet is the utmost depth to which the influence of a storm extends. Below that depth lies a mass of water unvaryingly still.

The stability of the breakwater is ensured by prolonging its front surface beneath the water line until it reaches a point 3 feet below the depth where the water is always still, that is to say, in the English Channel, to a point 17 feet perpendicularly below the level of the sea. Thus all disturbing force from beneath is completely excluded, and the lateral shove is the only force it is called on to sustain.



In the diagram, c d o n represents a section of the breakwater, a b, the level of the sea. It is clear, on account of the large area submerged, (m d o n) that it must possess an immensely greater buoyancy, or power of flotation, than any structure in the shape of a ship, and would therefore bear proportionally heavier armour and ordnance; not so heavy theoretically as granite forts, though practically there is little doubt it could carry as heavy armour and guns as could usefully be employed in forts. It is sufficient to say that the structure may be of any length or of any shape. Its construction in separate lengths or compartments would both facilitate necessary repairs, and obviate the strain to which a long rigid frame would be exposed from the unequal action of the waves along its front. It may assume the shape of a fort with more than a fort's invulnerability to vertical fire, for an iron roof covering the terre plein or roadway would throw off every shell into the sea either in front or rear. Its cost would be one-tenth that of a fort, and it could be towed into any position required. Its capabilities to bear the heaviest armour and the heaviest guns which it is proposed to put into the forts could easily be tested by a model at a trifling expense.

The above details given from memory do not by any means convey an idea of the ingenuity and merit of this invention. Captain Sleigh alone is capable of doing it justice. He submitted his plans to the Defence Commission, but the Commissioners,

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though thinking well of the idea, gave the preference to solid forts. The suspension of these works would seem to offer a fitting opening for a reconsideration of the subject.

Admirals Lord Dundonald, Sir Charles Napier, Sir E. Codrington, Captain Claxton, R.N., to whose skill in naval engineering Stephenson and Brunel were both so much indebted; all approved of the principles and plan of the floating breakwater.

The merit here claimed for it is, that if the reasoning on which the invention is based be correct, it will combine the power and invulnerability of a fort with the mobility of a floating battery. Experiment is the only means of establishing the correctness or the fallacy of that reasoning. Such an experiment in this case would cost but little, and the writer's only object is that a great possible benefit to the nation may not be lost for want of the same sort of trial which is vouchsafed every day to guns and shields, many of which are only proved useless.\*

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<sup>\*</sup> It would be well if our military and civil engineers directed their attention to the formation of excavations and the construction of shields for the protection against bombardment of all inflammable materials in our dockyards and arsenals, as has been done by our naval engineers for the protection of ships against heavy ordnance. If success attended their endeavours, and there is no reason why it should not be so, our dockyards and arsenals would be secure against bombardment from enemies' ships or batteries, however close. E.

## DEFENCE OF THE CANADIAN LAKES,

AND ITS INFLUENCE ON THE GENERAL

### DEFENCE OF CANADA.

The second question of importance to the English tax-payer at the present moment, is the state of our relations with America. It is useless to deny that the great majority of the people of the Northern States entertain a feeling of the bitterest hostility against England.

The "New York Herald," and a few other journals like it, are the exponent of that feeling. If we listen to respectable intelligent Americans we are told that those papers do not represent the sentiments of the respectable classes of the community. This may be, and probably is so; but unfortunately neither the executive, nor the power of the purse, nor the power of opinion, are in the hands of the respectable classes; but in those of a pestilent, vulgar and insolent democracy, who hold the power to embroil the world; a power unrestrained by political

sagacity or foresight; and which, like a lighted torch waved in a magazine by the hand of a child or maniac, they are now wielding to their own destruction, as well as to the hurt and detriment of their neighbours.

The simple proof of the existence of a general feeling of hatred towards England is to be found in the fact that the journals above referred to have immensely the largest circulation of any papers published in the States.

The motive which induces the editor of the "New York Herald," an Englishman, deliberately to falsify the truth, is not a genuine hearty hatred against the land of his birth. Such a motive would become by comparison almost respectable. The public feeling does not take its tone from his writings; but on the contrary his writings and opinions take their cue from the prevailing passions and prejudices, which he lashes into a furious madness, simply because those writings being seasoned to the exact taste of the public, he thereby sells a greater number of his sheets than he could do by honest and truthful journalism, though sustained by a force and eloquence never so convincing.

From the present almost universal feeling in the Northern States, every thoughtful observer of the signs must admit, to say the least, the extreme probability that in the event of the termination of the present civil war the North will turn its arms against Canada; with the view of endeavouring to

indemnify itself for the loss of territory and prestige sustained in the South. That the longer the present contest is continued, the greater and more dangerous will be the aggressive power of the Northern States at its close.

It is idle to talk of financial exhaustion when the passions of 500,000 armed men are excited to madness. We have only to compare the utter financial ruin of France in 1796 with the long career of victory and proselytism inaugurated during that year. There was an intimate relation between these two—the ruin and the triumph—that of cause and effect. The first rendered the last a necessity. True, the man was needed for the work; but great occasions have always produced their men; and who shall say that America may not produce a Napoleon, or that the destinies of a whole hemisphere do not furnish an occasion of sufficient magnitude.

To a people, boundless in self-conceit, totally wanting in principle, and possessing the strong hand of overwhelming military numbers which they believe they have only to stretch forth to restore prosperity, and—incalculably the stronger motive of the two—to obtain the revenge for which they are truly thirsting against an envied and hated rival—the defenceless condition of Canada will offer an irresistible temptation: "Delenda est Carthago" is the cry with which the northern armies will march eagerly and exultingly on Canada.

To suppose that the United States Government

would have either the power or the courage to control the popular feeling, is puerile in the extreme. The writer has heard Americans praise President Lincoln for the courage with which he controlled the popular madness, and saved the two countries from war in the matter of the "Trent" seizure. Let us examine the grounds of that eulogy a little.

Would any Government which respected itself, and which dared to oppose popular frenzy, have waited for the humiliating display of force backing up England's demand for the liberation of the Southern envoys, in place of disavowing the action of its officer the instant it became known, and restoring the envoys to England with a graceful apology. And why did the United States Government not take a course which, in the history of the time yet to be written, would have added lustre to Mr. Lincoln's administration, and would have saved the governing system of the United States from the merited ridicule and obloquy which must now attach to it? Why? but because it feared the democracy! and waited to see "which way the cat jumped."

Did Mr. Lincoln's Government display any tendency to control the popular madness, when it permitted one of its own members officially to approve the action of Captain Wilkes: when judges and senators vied with each other in applauding him and in hurling defiance at the British Lion—when Congress went so far as even to pass a vote of thanks to that valorous sea lawyer!

And when the demand was made for the liberation of the prisoners, did the Government take the initiative? It did not dare to do so. It allowed the terms of England's ultimatum to become known, and to produce its effect on the public fears. It allowed the press which had hurled such "brave from acts" across the Atlantic to swallow them and to roar as gently as a sucking dove, before it dared to make a sign of concession. Newspapers, senators, and mob orators, had to change their note, and swallow the leek in a manner so humiliating, that to those acquainted with human nature it is little surprising they should hate the power which was the cause of such humiliation, with tenfold bitterness. And yet from all this degradation, an honest fearless course in accordance with what it knew to be right and just, initiated by the Government, would have saved the nation.

Again did Mr. Seward—in his official reply to our demand, by courtesy called a State paper, (and certainly the most discreditable one that ever issued from the bureaux of a civilised people) display the courage to control and direct the feeling of the mob, when he asserted, probably not unblushingly, that although he admitted the right and justice of our demand, it would have been refused if a compliance with it had been at all inconvenient to the American people.

But the parallel with Ancient Pistol was not to be left incomplete. "I eat and eke I swear," said



that worthy when forced to swallow the savoury esculent. "We swallow your leek," said the Americans, "but we swear to be horribly revenged." This was the almost universal sentiment, and the fruits of that sentiment are now apparent in the Bill to enlarge the locks on the Erie Canal. Good natured Mr. Bull may not probably see why a measure apparently mercantile should seem to threaten his purse and peace. It is, therefore, essential he should learn that the measure has nothing mercantile about it. That Bill means simply American gunboats on the waters which separate the States from Canada; and what that means will be explained further on.

The future historian will say that English ships of war and English battalions extorted from the fears of the American mob a tardy act of justice, whose adoption the sentiments of justice alone would have been utterly powerless to procure; and further, that the Government of the day was simply the slave of that mob, and acted in obedience to its decrees.

In no sense during the present struggle has the United States executive shewn the courage to control the popular feeling. Its repeated acts of violation of the written constitution have been in deference to and not in opposition to that feeling.

As in the past, so in the future. The Government of the day will never dare to act in opposition to the mob. The favour of the latter is the breath

of its nostrils. It may indeed sit on the box of the State carriage, but the horses have the bits between their teeth, and no reins have yet been made, at least none in America, strong enough to guide them; although the growing military sentiments and the formation of a vast army, afford no doubtful indications of the change that may be preparing.

But there are other elements, besides these above stated, which will have a potent influence in urging the Americans forward in a career of aggressive warfare. The armies of the North number 500,000 well armed men, and clothed; as yet of imperfect discipline and organization, but in these last every day is effecting an improvement. Every day, too, is rendering each man of this vast force more unfit to return to civil life. They have acquired military habits; the trades and professions they quitted for the war are ruined; they are the best paid class of the community; and taxation is less felt by them than by others.

They will be naturally unwilling to give up their good pay to return to their ruined and now distasteful occupations. There is much reason to fear that they will take the bit between their teeth, in spite of the dummy charioteer, and march on Canada. Should the Government venture to oppose their desire, a military despotism is an easy and natural transition from the present despotism of the mob—and would be found besides a relief, by the upper classes—and the most favourite military

leader would be named "Imperator." Irresistible by their own rulers, this large army, when time shall have conferred on it consistence and discipline, will be one of the most formidable forces the world has ever seen.

For are they not for the most part of the Anglo-Saxon race? Does not the same current flow through their veins as that which moistened "the bloodstained hill" of Albuera, and even now fattens the gentle slopes of Waterloo? Men do not change the attributes of race with their form of Government, and this Northern people has already manifested all the fighting qualities which distinguish their race, as well as an energy and tenacity of which history can furnish few examples.

These things must be looked in the face. They are fraught with menace to our peace. The question is, what can England do to avert the danger? To avert it—nothing! at least nothing that is consistent with honesty and self-respect. But to prepare against a storm, so palpably brewing, is possible, and is moreover a duty of the Government. We might indeed run into port and save ourselves loss and inconvenience, to our indelible disgrace, by abandoning to the fury of the tempest the weaker consort who is unable to make the harbour without our assistance. We might indeed withdraw from Canada, and leave her to fight her own battles "on the ground of the refusal by the Canadian people to organise a scheme for their own defence." But it

should be considered that in their unwillingness to tax themselves heavily to provide against a danger, which however probable, is yet not certain, they are only imitating the English people, and working out the infallible results of representative institutions; by the operations of which, while wisdom and foresight are with the few, the power of the purse is with the many, who will as a general rule be averse to tax themselves, except in the presence of a pressing and immediate danger. It is for the above reason that at the commencement of a war, a despotic ruler must always have a great advantage over what is called a Constitutional Government; because, in the first case, the same individual, whose personal interest is concerned in the magnitude and sufficiency of warlike preparations, has also the sole power to order and direct them.

But to return from this digression; it is not "her own battle" that Canada will, in the case here anticipated, be called upon to fight. It is hatred and jealousy of England which will prompt an attack on Canada, and a reflected hatred of Canada for her attachment to England; and no English Minister would for one moment entertain the thought of abandoning that province. We are bound by every sentiment of justice and honour to stand by Canada, and bear her harmless in our own quarrel.

This obligation does not however absolve the Canadians from adopting such a system of self-defence as would give an organized effect to their

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efforts when called upon to repel an invader; and there are certain considerations of self-interest which should impel them to do so betimes. If war comes, it is very evident that the initiative will be taken by the Americans; they will choose the time most convenient to themselves and the most inconvenient to their adversary. The first declaration of war would be the invasion of Canada, and the time chosen would be the month of October; because ample time would remain before the winter for establishing themselves firmly in all parts of the Canadian territory, and yet the season would be too late for reinforcements by sea.

Now to say the season would be too late for receiving reinforcements by sea, is to say that not a man, nor gun, nor pound of ammunition, could reach Canada during that winter. It is beside the question to quote the experience of last winter. There was no state of war, and the march of the few troops who reached Quebec through New Brunswick was unopposed. But after a declaration of war it would be impossible to use that route, and this must be evident to the merest tyro in military matters.

A glance at the map shows that the State of Maine pierces like a wedge between Canada and New Brunswick. The eastern boundary of that State is formed during a part of its length by the river St. John's—and on the bank of this river runs the only road for the march of troops bound for

Quebec. In winter, owing to the depth of snow, the beaten track runs sometimes on one side of the river, sometimes on the other; that is to say—sometimes in British, sometimes in American territory. Ten thousand Americans entrenched at that point would block all passage, and doubtless this would have happened last winter had war been declared. It is quite evident from this that the scheme of constructing a railroad for the transport of troops through New Brunswick is the merest delusion.

The American Generals are not fools; nothing can be told them here that they do not know already:
—with the enormous forces they will wield, the above and far more will become easy of accomplishment.

On the other hand, a war would find Canada with its present regular garrison, a few thousand volunteers already enrolled, no militia, and no ships of war on the Lakes. What would be the result? The Canadian army could not show its face in the open country. It must be employed in garrisoning Quebec and Kingston, and in occupying the entrenched camps which should be formed at Montreal in Eastern Canada, and, probably, at London in Canada West; on which places as nuclei the volunteers and militia of the two provinces would swarm, and where they might receive that organization which could alone fit them to cope with the invaders in the field. More than this the present force in Canada could not attempt. Small detach-

ments would only ensure their own loss, and the only hope would be to keep the trained force in masses in impregnable positions, where they would form a nucleus for the assembly and training of a volunteer army, and where they might await the arrival of Spring reinforcements from England.

Be that as it may, it is certain that the whole of Canada from west to east would lie at the mercy of the invaders during the winter.

A consideration of the foregoing circumstances should convince the Canadian people that the safety of their properties and liberties must depend, especially at the outset, mainly on themselves. Any land force which England could furnish would be utterly insufficient to oppose such an invasion as might be directed against Canada. But on another element England could do much, and here is the point it is especially desired to urge—viz., the naval defence of the Canadian Lakes, and the paramount importance of doing something to ensure our supremacy on those waters in the event of war.

This may be made clear to any person of common sense without the possession of any military knowledge.

Referring to the map it will be seen that the Canadian frontier to be defended may be said to extend from Amherstburg on the west to Quebec on the east, and to be divided into two principal sections.

The 1st section extends from Amherstburg at

the western extremity of Lake Erie, to Kingston at the eastern end of Lake Ontario. This section is thus formed and covered throughout by those two lakes.

The 2nd section, that is, the frontier from Kingston eastward, is formed by the St. Lawrence river as far as the point where it is crossed by the parallel of 45°; it then runs along this parallel until it strikes the boundary of New Hampshire, which it follows for a few miles; after which the remaining Canadian frontier eastward is coterminous with the State of Maine.

The part of this 2nd section which is formed by the river St. Lawrence is pervious at every point to any band of marauders who may choose to cross either by day or night, to plunder, or to blow up the locks of the St. Lawrence canals (to be adverted to further on) by which alone gunboats from the sea can now reach Lake Ontario.

That part which is formed by the parallel of 45° is pierced by Lake Champlain and the Richelieu river, which afford an opening into Canadian territory directly towards Montreal. The natural position of this, the capital city of Canada, is strong in summer; but in winter an army can march across the river, which at other seasons forms its chief defence. The navigation of the Richelieu is commanded by the Canadian island fort of Isle aux Noix situated about fourteen miles from Lake Champlain.

The essential points of the 2nd section which it

would be necessary to guard, supposing the defensive force to be adequate to the purpose, are Montreal, Quebec, and the principal towns along the St. Lawrence, as the main line; particularly *Prescott*, which is a strategical point of importance, being opposite to the large American town of Ogdensburgh which is the terminus of Railroads from all the Atlantic and western cities of the Union, and being itself connected by railroad with Ottawa, Kingston and Montreal. It is very desirable that an entrenched camp should be constructed at Prescott.

As an advanced post, covering Montreal from an attack made by Lake Champlain and the Richelieu river, Isle aux Noix should be strongly held.

Likewise the bridge of St. John's, the railroad bridge at St. Hilaire, and Sorel at the mouth, all on the Richelieu—for the purpose of assuring the defence of that river and covering Montreal against an enemy coming eastward.

Reverting now to the 1st section, between Amherstburg and Kingston, which is covered by the lakes—it is evident that the country in rear of those lakes will be completely open to attack, or entirely secure from attack, according as the naval command of those waters is with the Americans or ourselves. Without that command all parts of the frontier will be equally weak for defence: with it, the western section will be strong, the eastern weak.

Both sides are precluded by treaty from maintaining in time of peace more than a specified equality of force, limited to one armed vessel, on any of the waters, whether lake or river, which separate the two countries. But such are the advantages of the American position and, on the other hand, the disadvantages of our own, that it is not a matter of conjecture merely but of absolute certainty, that they would acquire the superiority if a war should break out under the present relative conditions of the two Powers. But this superiority at the outset implies the command of the lakes during the whole contest, and, in conjunction with their overwhelming land forces, the permanent occupation of Canada.

For this humiliation we might think to indemnify ourselves by sweeping the American fleet from the ocean—by the destruction of American commerce and by the capture or blockade of their seaports.

The two first we should certainly effect, our wooden fleet would suffice for so much; but the last is not quite so certain under the changed and changing conditions of naval warfare. As regards iron plated vessels, our opponents might be equal, certainly not much inferior to ourselves. And for the defence of harbours, to which their naval warfare would be necessarily limited, stationary floating batteries can always be superior, both for offence and defence, to the vessels which come over sea to attack them.

If the Americans should acquire a firm hold on Canada, which in the event of hostilities they will unquestionably do, if to their preponderance on land they are allowed to join the command of the waters which separate the two countries, then from the shores of those waters would arise a din of preparation from the hammers of all the Union shipwrights, and through the different canals would issue forth to the ocean a fleet that should contest the naval supremacy of Great Britain.

Without pronouncing an opinion on the justness or fallacy of their reasoning, the above is the light in which the matter would be viewed by the American people.

The only possible means of successfully defending Canada against the supposed invasion are

1st. To lose no time in securing the command of the frontier waters.

2nd. To make our doing so a condition with the Canadian Government that they set on foot and organize a Militia or Volunteer force of at least 150,000 men, intimating in the event of a refusal—not that we should desert them in a war with the United States—but that, as to leave in Canada its present insufficient and unsupported garrison would be only to expose our troops to capture without any useful result to the Canadian people, we must withdraw our force, relinquish all attempt to defend their country, and direct the whole of our efforts against the American seaboard, to aid them in the only manner possible by operating a diversion in their favour.

If the Canadians should still persist in their re-

fusal, and should finally prefer incorporation with the Northern States to the occupation of their territory by a hostile army living by forced contributions—the discredit, if there be any, would not attach to England.

Such a refusal is not by any means anticipated; rather a tardiness is to be feared; but it should be remembered that time is of vital importance, and that it is vain to expect that new levies, however brave and good the spirit which animates them, could oppose with any prospect of success an equal number of American troops, who will have had the training of at least two years constant warfare.

Any measures therefore to be taken by England to acquire the command of the Lakes, should be only a part of the plan, of which the adoption of a well considered defensive system by the Canadian Government is the indispensable complement.

The *pros* and *cons* of the present condition of affairs in the event of war may be summed up as follows.

#### Pros.

1. The loyalty of all the inhabitants of Canada, aggravated by a peculiar dislike of the Northern States. The French population might give trouble if we engaged in a war with France, but they hate the Yankees, and have a salutary dread of being "improved off the face of the earth," as the writer once heard an American tell a French Canadian

would be the lot of his countrymen if Canada was joined to the United States.

2. The rapid and easy means of communication and concentration at any threatened point, afforded by the railroad and telegraph, which runs for the whole distance behind the frontier line; although these being in many places close to that line would be liable to interruption by the enemy.

## Cons.

- 1. The small military force now in Canada.
- 2. Although the material for forming an army of volunteers is fully equal to that of the United States, no steps have been taken for the formation of such a force, and the country would be overrun during the time required to bestow on it an efficient organization.
  - 3. The absence of trained militia.
- 4. The impossibility of receiving a reinforcement from England in winter.
- 5. The advantages possessed by the Americans for obtaining the naval command of the waters which cover half of the frontier. Steamers ply on Lakes Ontario and Erie during the greater part of the winter, but we are debarred by ice from sending vessels up the St. Lawrence until the month of May.
  - 6. The immense extent of frontier to be guarded.

It is probable that a call for Volunteers in Canada would be responded to readily; and there are rea-

sons why such a force is preferable to a militia, in which service is compulsory. First, it is human nature to undergo more cheerfully labours and sacrifices which are voluntarily undertaken, than those which are imposed. Secondly, such a force would comprise the youth and enterprise of the community; and more alacrity and eagerness would be shewn by the men composing it in acquiring military training. For any enterprise where dash and hardihood are required, there is no comparison between a volunteer force and militia.

But if difficulty should be experienced in getting volunteers, it is just and reasonable, where the public safety is threatened, to require every man capable of bearing arms to contribute to the public defence, either in person or by substitute. The substitute might either be another man or a specified sum of money. This appears to be a natural and just basis for any Militia Bill, and all should be obliged to serve in the militia who are not enrolled and drilled in some volunteer corps.

The most perfect image of a peaceful community, always employed in industrial pursuits, yet organized and constantly armed to repel aggression, is a hive of bees. Let their territory be disturbed by some rash aggressive hand, how speedily these diligent workers are converted into martial furies! So let it be in Canada. The object should be to interfere as little as possible with the industrial pursuits of the people, and yet to confer upon them an

efficient organization for defence. Some sacrifice of time all must make to acquire the essential training; but that object being achieved, it would not be necessary to keep more than a small proportion of the whole in permanent military bodies, the rest being dismissed to their homes, where it should be compulsory on them to meet for two hours' drill on every Sunday and general holiday.

The Militia might be divided into moveable and sedentary.

The moveable force, composed of all males between the ages of eighteen and fifty, not already enrolled in a Volunteer corps, might be equally divided into active and reserve, embodied alternately for the periods and during the seasons which convenience might prescribe.

The sedentary force, composed of all other males not physically incapable of bearing arms, need not leave their homes. They should be trained; alarm posts for the different companies, and central alarm posts for the battalions, should be specified; and the men habituated to repair to them on any sudden call. This would meet the case of marauding parties of the enemy; and in every militia district some central position might by the men themselves be converted into a stronghold, where the concentration of one or more battalions, according to need, might enable them to maintain themselves until reinforced as an armed body against a superior force. There are probably sufficient arms in Canada to arm the

Volunteers and Militia; but many of the men have rifles of their own, and are good marksmen with those rifles, which they might not be with our own heavier regulation arm.

And though the corps de bataille must consist of bayoneteers, it might be advantageous to have one-fourth of every battalion, the best shots, armed with their own rifles. A little instruction would make them the best skirmishers in the world, as they already are the most expert backwoodsmen.

These suggestions are hazarded for what they are worth; local circumstances may render them inapplicable. But without some definite system inaugurated at once, and faithfully acted on, the emergency when it arrives, will produce a frightful scene of confusion and ruin. A levy en masse would have to be resorted to in a hurry, and would doubtless be nobly responded to; but without previous organization and training, in the attempt to oppose disciplined troops, great numbers will only ensure great slaughter.

To turn now to that part of the general defensive plan which should fall to the share of England, viz. the measures necessary to ensure our naval preponderance in Canadian waters, the advantages for general defence which would result from that preponderance may be briefly enumerated as below.

1. That part of the frontier covered by the Lakes would become inaccessible to attack from the American side, and two-thirds of the troops which would

otherwise be required to defend Western Canada, could be spared to reinforce the line of the St. Lawrence, the weakest part of the frontier.

- 2. The Americans have many large and rich towns on their side of the Lakes which would thus be continually threatened. We should hold the power of disquieting them at several points simultaneously by demonstrations; thus obliging them to keep inactive a large force to protect their towns from attacks which yet never might be made.
- 3. From 1 and 2 would result the double advantage of being able to reinforce the weak part of our line, at the same time that we compel the enemy to weaken the force with which he would assail it.
- 4. The naval command of the Lakes carries with it that of the St. Lawrence, on which a proper employment of our gunboats should render extremely difficult, almost impossible, the crossing of any large American force of men and material.
- 5. The command of the St. Lawrence would enable us to utilize our inferior military numbers in the most effectual manner. By means of the gunboats, we could confine the enemy's operations to certain fixed points which we could entrench by anticipation, and where we could concentrate on emergency.

In one word, the command of the frontier waters would render the defence of Canada an easy matter with a comparatively small land force—whereas the contrary would render it an impossibility. In sup-

port of this assertion it is only necessary to refer to the past history of the present civil war. Wherever the Northern gunboats could go, there successes were uniformly achieved, or defeats arrested by their operation. Wherever the gunboats have not co-operated, the Confederate arms have been uniformly victorious.

It remains to consider how a result so vitally important to the defence of Canada is to be achieved, and it must be confessed the difficulties in the way are very serious, not so much on account of the magnitude of the difficulties in themselves, as of the probability that the measures needed to remove them will be postponed until too late.

The conditions on which any plan must be based, are:—

- 1. The Treaty prevents us from keeping armed vessels on any of the waters which form the boundary between the two countries: this prohibition therefore extends down the whole length of the St. Lawrence, from Lake Ontario to Beauharnois, only about nine miles above the Montreal island.
- 2. Between Lake Ontario and Montreal the St. Lawrence is broken by numerous rapids which no vessel can ascend; these are turned by canals; but the canals, one of them on the south bank of the river, run close along the river shore, and could not be used in time of war, because the blowing-up of one lock on a dark night by a single man would destroy the communication.

and Lake Ontario—by the river Ottawa and the Rideau Canal; which last has its termini at Bytown on the Ottawa, and Kingston on Lake Ontario. The Rideau canal was constructed expressly to secure the safe transport during war of men and stores between Eastern and Western Canada, out of reach of an enemy's attack. It is a magnificent work in every respect, and its locks are sufficiently capacious for all requirements. But unfortunately this route is altogether closed to gunboats by the fact that the Ottawa, like the St. Lawrence, is between Montreal and Bytown, broken by insurmountable rapids, and the locks of the canals which turn these rapids can admit nothing larger than barges.

Thus it appears that before a declaration of war we are precluded by treaty from sending gunboats to any part of the Lakes or river which separate Canada from the United States: that after a declaration of war the Americans can prevent us from employing the direct route of the St. Lawrence for that purpose; and that the size of the locks on the Ottawa canals shuts up the only remaining route.

It is surely matter for serious reflection that under these conditions, if a war should break out, it would be simply impossible for England to oppose America on the Lakes; and that on the St. Lawrence the action of gunboats would be limited to that part of the river below Beauharnois.

On the other hand the Americans have appropriated money for the enlargement of the locks on the Erie canal; and have projected the construction of a new canal to connect the Illinois river with Lake Michigan, near Chicago. By the first they will be able to send gunboats in any number from New York to the two lower lakes Erie and Ontario; by the last from New Orleans by the Mississippi to the upper lakes Michigan and Huron.

Besides these, two canals already exist, connecting the Ohio river with Lake Erie, by which if the locks are large enough, the whole Mississippi flotilla could be transferred to Lake Erie. If they are not of sufficient capacity to admit of this, doubtless they will be made so. The Americans appear to have a peculiar genius for this sort of work, witness the rapidity with which they constructed a canal at New Madrid for the reduction of island No. 10.

Is there then no remedy for this state of things? Must we look on meekly, like sheep in a pen, while the butchers are sharpening their knives? Doubtless there is a remedy, and doubtless the subject has received the attention of our Government.

But the public may feel assured that the honour of the country, as well as its purse, are concerned in the speedy adoption of some plan which, while it ensures our naval supremacy on the Lakes, provides for Canadian soil its only natural and possible defence in a force composed of children of the soil.

Prevention is simpler, easier, and will be found less costly than Cure.\*

\* The enlargement of the locks of the short Ottawa Canals, which were constructed for the purpose of turning the rapids of that river, would enable us to send gunboats from Montreal to Kingston. By employing relays of labourers by day and night, this work might be accomplished in the course of a few weeks;—and this should be done without delay.—E.

THE END.



